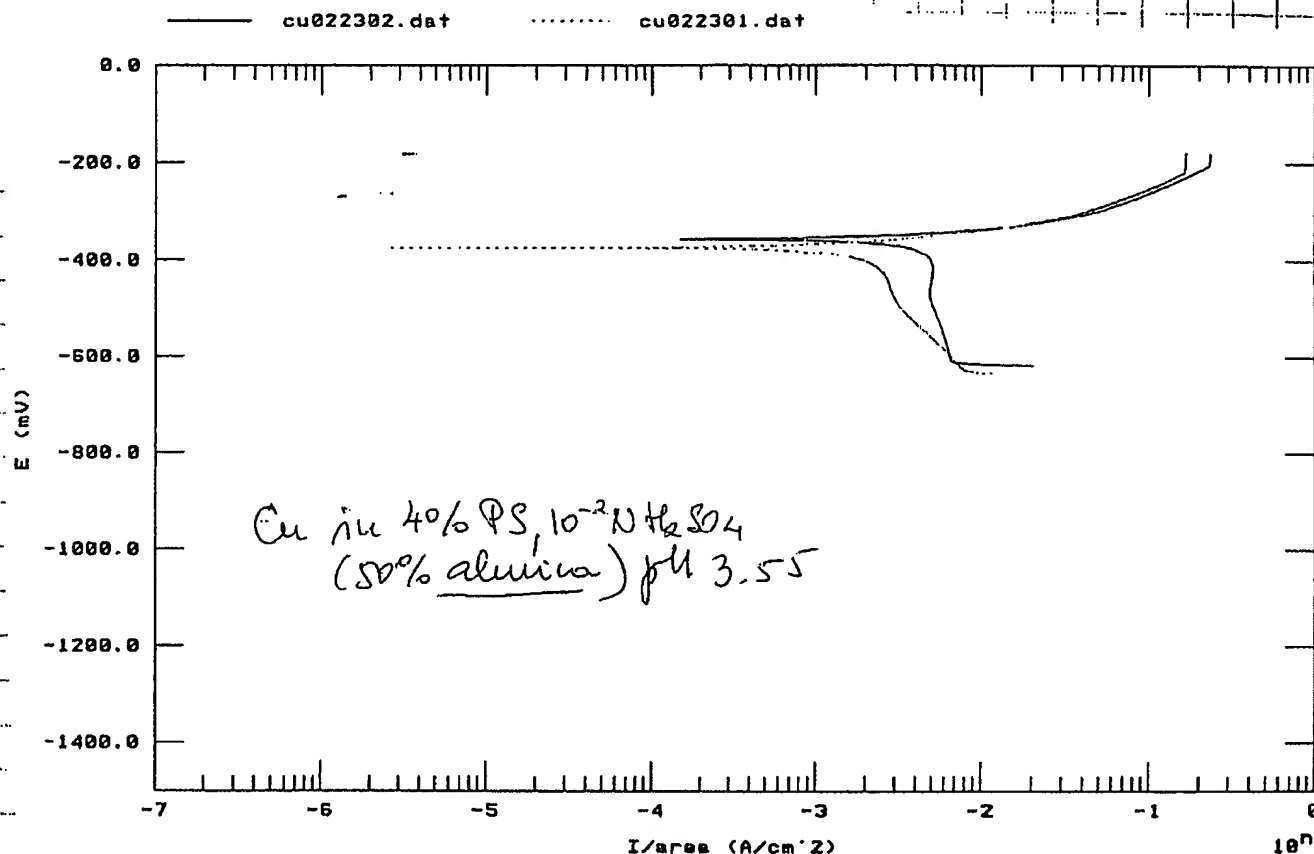




All of the tests today were conducted on copper rid in slurries prepared with alumina.

The following was observed:

- 1) alumina has not altered the observed kinetics in ferrous sulfate/sulfuric acid slurry (Figure below).



- 2) Peroxide is an oxidizer which without added acid shows pH of close to 5. Solution forms Cu, with rates below 200 A/min. Addition of acids increase Cu dissolution but at the most in sulfuric acid pH 2.49, the chemical rate is still well below 1×10^{-2} A/cm².

- 3) Important: 9% H_2O_2 , 2% oxalic acid pH 1.91 shows very interesting kinetics: fast dissolution w/ abrasion and excellent passivation after abrasion. Figure on p 20.

Signed

Date

10 knots B

Understood and Witnessed

Signed

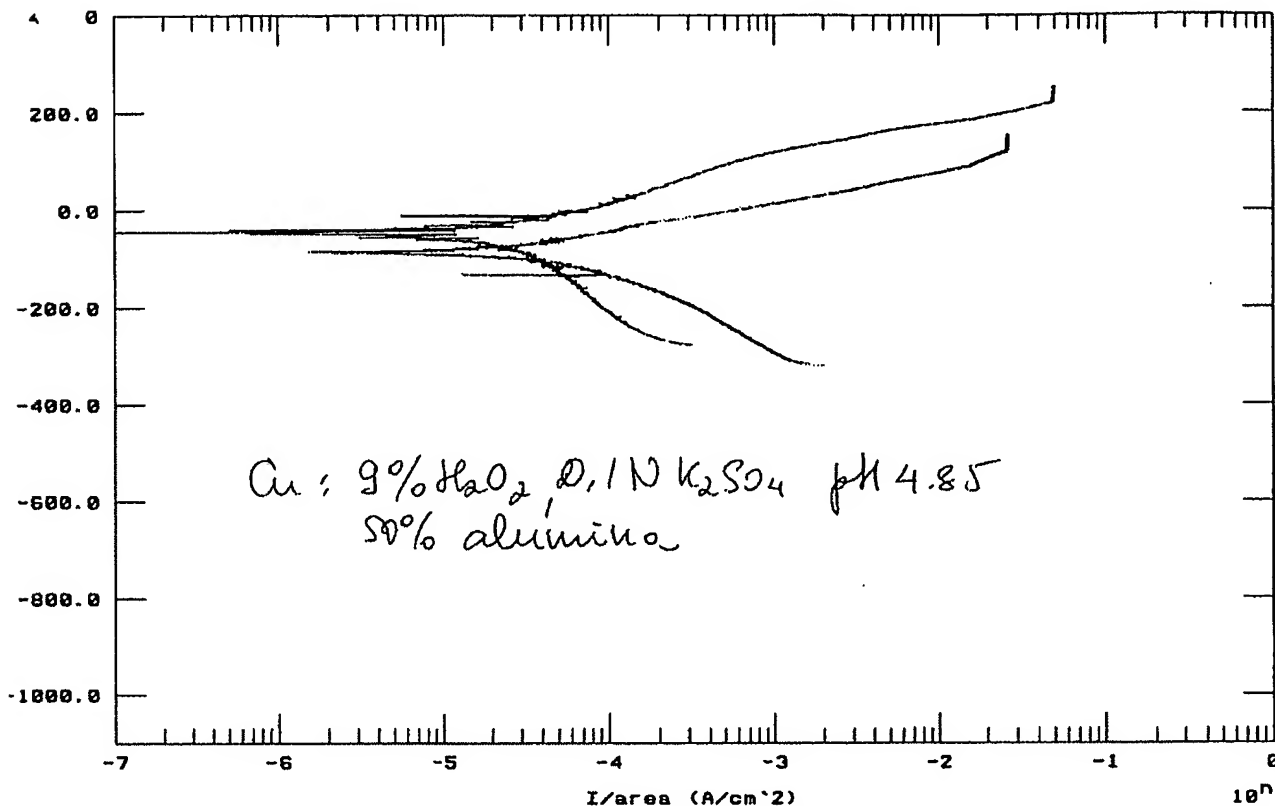
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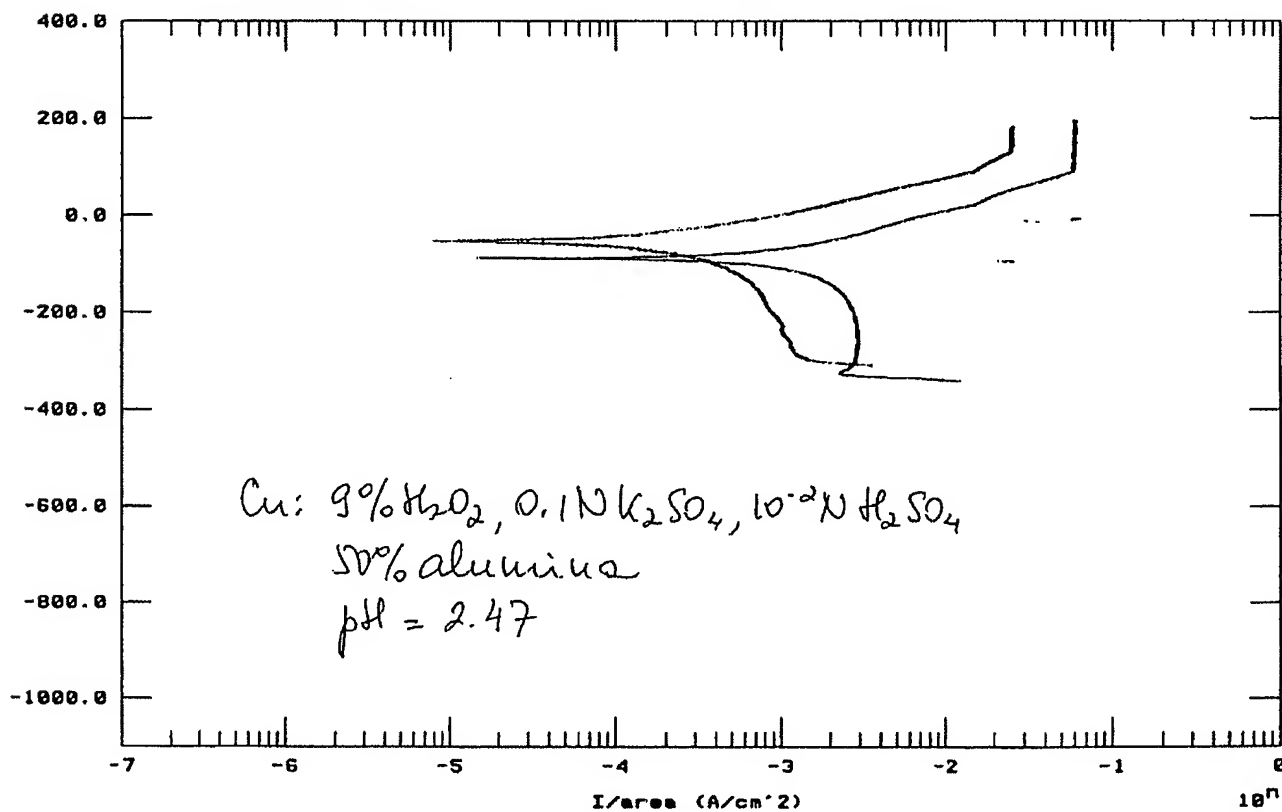
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cu022314.dat

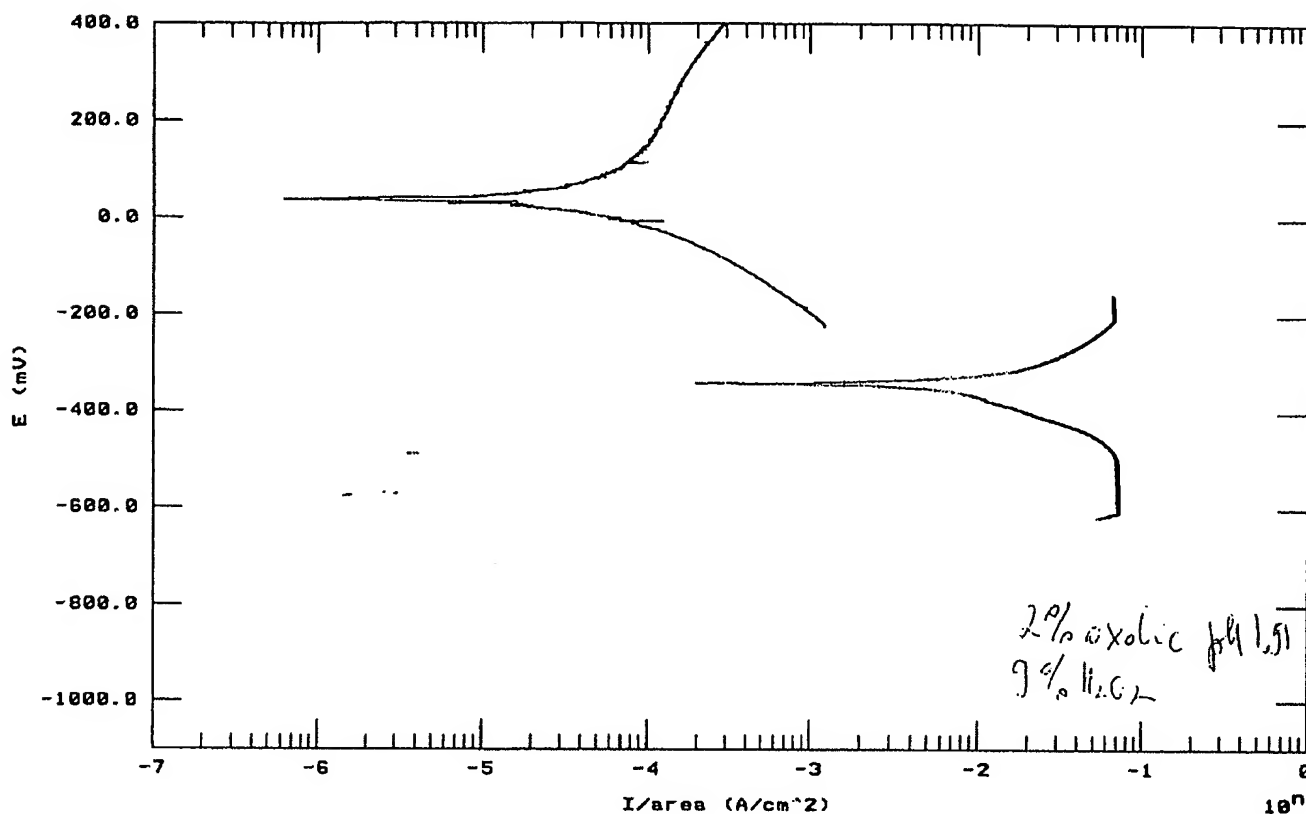
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Signed *Thad D.*

Understood and Witnessed

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Feb 26, 1996

Ti was tested in persulfate/oxalic acid (i.e. Cu "slurry" without lithium aluminum fluoride)
 very low Ti dissolution rate ($< 1 \times 10^{-3} \text{ A/cm}^2$) increases to about 3×10^{-2} or 6000 A/min with aluminum fluoride.
 Concern: Ti is not repassivating in fluoride solutions

Cu in the same solution is still slurry the same kinetics with average rate of $2 \times 10^{-4} \text{ A/cm}^2$...

Cu in $\text{Fe}(\text{NO}_3)_3$ with BTA and NLS shows controllable chemistry: there is significant "passivation" with BTA. But NLS, even in amount of 0.002%, diminishes the effect of BTA. Controllable chemistry! Figure on p 22.

Signed *W. H. Brown*
 Date

Understood and Witnessed
 Signed
 Date